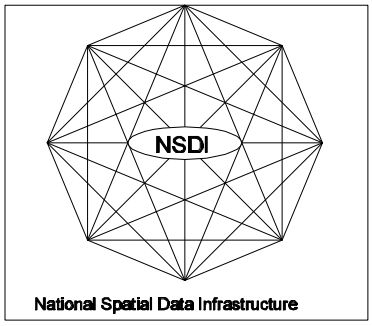

Environmental Hazards Geospatial Data Content Standard

Facilities Working Group
Federal Geographic Data Committee

draft

June 1997

Federal Geographic Data Committee

Established by Office of Management and Budget Circular A-16, the Federal Geograph
promotes the coordinated development, use, sharing, and dissemination of geographic d

The FGDC is composed of representatives from the Departments of Agriculture, Comm
Housing and Urban Development, the Interior, State, and Transportation; the Environm
Federal Emergency Management Agency; the Library of Congress; the National Aeron
Administration; the National Archives and Records Administration; and the Tennessee
Federal agencies participate on FGDC subcommittees and working groups. The Depar
committee.

FGDC subcommittees work on issues related to data categories coordinated under the d
establish and implement standards for data content, quality, and transfer; encourage the
the transfer of data; and organize the collection of geographic data to reduce duplicatio
are established for issues that transcend data categories.

For more information about the committee, or to be added to the committee's newslette

Federal Geographic Data Committee Secretariat
c/o U.S. Geological Survey
590 National Center
Reston, Virginia 22092

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World Wide Web: http://fgdc.er.usgs.gov/fgdc.html

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Part One: Introduction

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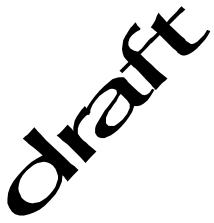

1. INTRODUCTION

1.1 OBJECTIVES

To develop a nationally focused Environmental Hazards Geospatial Data Content S
Environmental Hazards Standard) that will establish a consistent approach to sharing ir
man made substances, materials, and conditions that are, or have the potential to be, det
earth. The Environmental Hazards Standard will not include the standardization of a pl
implementation schemata but it will be available for those interested.

1.2 GOAL

1. To compile common definitions for environmental hazard data that will facilitate
understanding, and automation of geospatial information.

2. To standardize entities, attributes, and domain values that will improve the creati
sharing of environmental hazard data.

3. To resolve discrepancies related to the use of similar terms, thereby minimizing c
systems.

1.3 SCOPE

The environmental hazards standard will address data concerning the evaluation and
of environmental hazards, monitoring the presence of hazards, preparedness and protec
remediation of their effects. This standard will include the management of information
substances, hazardous materials, and physical conditions that affect the earth's ecosyst
systems (both surface water and ground water.) This standard will not address natural
earthquakes.)

1.4 JUSTIFICATION/BENEFITS

There is no national geospatial data content standard for environmental hazards. A
standard supporting the study, management, and remediation of environmental hazards
materials managers, solid waste engineers, and public works officers. Benefits would a
situations, when efficient management and data sharing between federal and local agen
hazardous materials and protecting the environment.

Development of Environmental Hazard Standards through the FGDC will provide an o
participation from national, state, and local governments, municipalities, professionals
Environmental Hazard Standards will also support the FGDC's integrated standard data
new data sharing opportunities for the National Spatial Data Infrastructure (NSDI) (i.e.
governments, as well as the private sector.)

1.5 APPLICABILITY

1.6 STANDARDS DEVELOPMENT PROCESS

This standard was developed by the Environmental Hazards project team under the
Working Group. Much of the environmental hazard information contained in this stand
Environmental Hazards project team.

The Environmental Hazards project team had participants from Federal agencies, profe
governments, and private industry. Specifically the following organizations were signi
development of this standard:

U.S. Army Corp of Engineers
American Public Works Association
Environmental Protection Agency
Applied Geographic, Inc.

Editors Note: Additional names of organizations that are represented on the pro

significant contributing organizations to this standard shall be added to this list.****

1.7 RELATIONSHIP TO OTHER STANDARDS

Information contained in the ESAVIS Environmental Hazards Standard closely parallels

EPA CAS Registry Number, June 26, 1987 Identification of Chemical Substances Service Registry

ANSI X3.50-1986, American National Standard for information systems --represen
and other units to be used in systems with limited character sets.

NIST Special Publication 811, 1995 Edition, Guide for the Use of the International
standardizing units of measure.

Related Documents: (Editor's Note * Lois can you get me t full information on these do
probably be moved to Reference section ***)

AR 200-1 Army Environmental Reference (Feb 1997 update) Environmental Protect

AR 385-69

CFR 32-626/627

AR 50-6

EPA-CFR 40

ASTM

Cerclis

1.8 MAINTENANCE

The Department of Defense, U.S. Army Corps of Engineers maintains the Environm
for the Federal Geographic Data Committee with support from the Tri-Service CADD/
general questions concerning this standard should be addressed to:

U.S. Army Corps of Engineers
General Engineering Branch
20 Massachusetts Avenue, NW
Washington, DC 20314-1000

All technical question pertaining to this standard should be directed to:

Tri-Service CADD/GIS Technology Center
ATTN: CEWES-IM-DA
3909 Halls Ferry Road
Vicksburg, MS 39180-6199

2. PARTS OF THE STANDARD

The Environmental Hazards Standard addressees three application areas 1) pollution operations/management of hazardous site, and 3) facility emergency preparedness. Th parts. The Introduction, Part I of the Environmental Hazards Standard, defines the pu followed during its development, the organization(s) involved in its development and m to other standards. Part II contains a comprehensive Entity Types report which lists the type names and definitions, the object type, and their associated entity class and attribu comprehensive Attributes report which contains a complete listing of attributes tables a hazards entity types and each attributes names, definitions, data type, character length, Part IV contains a comprehensive Domains report which contains a complete listing of definitions) associated with environmental hazards attributes and lists the values for ea value.)

Part I	Introduction
Part II	Environmental Hazards Entity Types
Part III	Environmental Hazards Attributes
Part IV	Environmental Hazards Domains
Annex A	Environmental Hazards Entity Relationship Model

3. ENTITY TYPE, ATTRIBUTE, DOMAIN LOGICAL DATA MODEL

Agreement on a common format is not sufficient to ensure that the geospatial inform to both the sender and the receiver. In order to share spatial data (and as part of a SDT common data model must be defined and used. In addition, semantic content of a spat associated attribute and attribute value information) must be well defined and agreed u and specified in either an off-line document (i.e. data content standard and/or in the m e 2 of the SDTS is a formal attempt to develop a standardized list of entities. Additional want to share geospatial information are developing data content standards modeled af

This Environmental Hazards Standard is based upon the SDTS geospatial data mod of that standard. The SDTS data model depicts the real world as consisting of entities

are assigned attribute values. The EnvironmentalHazard Standard defines environmen
attributes and specifies the domain (range or list) of attributes values. In addition, this s
additional extensions to the SDTS data model including the concept of grouping enviro
components (entities) into entity classes and linking specific attributes to specific entity

4. DEFINITIONS

For the purpose of this EnvironmentalHazards Standard, the following definitions appl

1.1 **entity class** - logical group of related entity types (e.g., grouping of water system com
water_hydrant, water_line, water_pump, water_reservoir, water_tank, ... into an water s

1.2 **entity type** - definition and description of a set (class of real world phenomena) into
are classified (e.g., water_reservoir).

1.3 **entity instance** - real-world spatial phenomenon about which data is collected, main
the McMillan Water Reservoir). Entity instances are the geospatial objects that are gra
database.

1.4 **attribute** - a defined characteristic of an entity type (e.g., an attribute of electrical c
material).

1.5 **domain** - a finite list (or range) of permissible values for a specified attribute. Inclu
measure, types, styles, status, names, methods, materials, dispositions, sources, dimens
electrical cable material--Al, Fe, Pb, steel, Cu, ...).

1.6 **attribute value** - a specific quality or quantity assigned to an attribute for a specific
cable material = Cu).

1.7 **IDEF modeling** - Integrated Definition (IDEF) is the name given to a family of over
techniques. The IDEFo and IDEF1x are the best known of these techniques. IDEFo te
business processes or activities for reengineering a function. IDEF1x techniques are us
create a logical data model.

1.8 **geospatial data** - data with implicit or explicit reference to a location relative to the

1.9 **Data Content Standard** - provides the semantic definitions for a set of real world sp
significance to a community. Data Content Standards may be organized and presented
such as an entity-relationship model or and IDEFIX model

1.10 **EnvironmentalHazards** - natural and manmade substances, materials, and conditio
potential to be, detrimental to life and ecosystems on the earth..

5. REFERENCES

Tri-Service CADD/GIS Technology Center (1996) "Tri-Service Spatial Data Standards

Spatial Data Transfer Standard
Editors Note: Are there other references that should be listed here?*